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ABSTRACT

This publication highlights the similarities and differences found in education systems among many of the world's developed nations. The report seeks to show how different nations govern their education systems, how they set and implement standards, who their students are, how the students perform on achievement tests, and what reforms are being implemented. Among the specific findings of the report are that while the United States has a highly decentralized education system, many other countries have strong national ministries of education that provide direction and substantial funding for schools. The United States is one of very few developed countries without extensive oversight and direction of curriculum by the federal or regional government. Only the United States relies heavily on standardized tests. A recent International Assessment of Educational Progress (IAEP 1992) showed that U.S. 13-year olds ranked 14th out of 15 countries in mathematics knowledge and 13th in science. The United States has the highest postsecondary enrollment ratio in the world. (Contains 12 references.) (DB)

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International Education Comparisons

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International Education Comparisons

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September 1992

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November 1992

In August of this year, 14 education ministers from the Asia Pacific Economic Cooperation (APEC) group met in Washington, D.C. to discuss issues focused on the theme of "Education Standards for the Twenty-First Century." During our discussions, I was struck by the similar challenges and concerns that ministers from very different societies share. Issues such as making sure our children are prepared to be productive workers and citizens in the next century, meeting the educational needs of a diverse student population, and fostering individuality and creativity while maintaining high standards of achievement were all at the top of every minster's agenda.

This publication, **International Education Comparisons**, highlights both the similarities and differences found in education systems among many of the developed nations. The report shows how different nations govern their education systems, how they set and implement standards, what their students look like, how they do on achievement tests, and what reforms are being implemented.

Three years ago, President Bush and the nation's governors established six national education goals for the year 2000. These goals call for all children to start school ready to learn; to raise the high school graduation rate to at least 90 percent; to ensure that all children are competent in core subject areas; for American students to be number one in math and science; for all adults to be literate and able to compete in the modern workplace; and to rid all schools of drugs and violence.

In April, 1991, the President announced AMERICA 2000-a national strategy to help communities achieve the goals. Over 2,000 communities across the country are now involved in this effort. As the nation undertakes the ambitious task of transforming American education so we can meet the six goals, it makes sense to know what other countries are doing right and how those successes can help us in this country create the best schools in the world for our children. We hope this publication contributes to that.

Lamar Alexander
November 1992

International Education Comparisons:

Summary of Significant Similarities and Differences

In comparing the education system of the United States with those of other developed nations, the following similarities and differences were found:

Structure and Governance

- The United States has a highly decentralized education system. States and local communities have primary control over schools and responsibility for funding. Other countries with strong regional or state ministries of education include Australia, Canada, Germany, and Switzerland.
- Many other countries have strong national ministries of education that provide direction and substantial funding for schools. These ministries typically
  - set curriculum standards;
  - set requirements for class size, teacher qualifications, and other administrative requirements;
  - set requirements for entrance and exit examinations; and
  - provide funding for teacher salaries and construction.
- The percentage of students in privately administered schools in most developed countries is small (less than 10 percent). The countries with the largest proportions of students in privately administered schools are the Netherlands (67 percent) and Belgium (56 percent), although in both countries, private schooling is wholly state-funded.
- Most nations provide more financial support to religiously affiliated than to other privately administered schools. In addition, nations that support private schools, including religiously affiliated schools, typically regulate those schools with respect to teacher qualifications, physical requirements such as class size and facilities, and student assessment.
- Parental choice between a local public school and a religiously affiliated school is widespread in many developed nations and, with a few exceptions, is not a major issue for public debate. Most countries have long-standing arrangements

for public financing of religious and other privately administered schools. In some cases, religiously affiliated schools are considered public, rather than private, schools.

- Choice among public schools may be much more restricted, with students limited to specific public schools by attendance area. Major exceptions include Great Britain, which has embarked on a program that permits parents to exercise wide latitude in choosing which school their children should attend, and the Netherlands, with a constitution that provides for extensive choice of schools.

Characteristics of Education Systems

School Population

- The United States has, by far, the largest elementary and secondary student population (45.4 million) among developed nations. However, enrollment ratios in the United States are similar to those of most other developed nations.
- Similarly, our more than 10,000 postsecondary institutions enroll more students than those of any other nation.
- In several developed nations, at least 90 percent of the student population is from a single ethnic and linguistic group (e.g., France, Hungary, Ireland, Japan, Korea, and Scotland). In contrast, the U.S. student population is racially, ethnically, and religiously diverse. Other nations with diverse populations include Australia, Canada, Spain, and Switzerland.

Curriculum

- The United States is one of very few developed countries without extensive oversight and direction of curriculum by the federal or regional government.
- Unlike the United States, many countries (e.g., Austria, Germany, Korea, Japan, and Switzerland) differentiate schooling at the upper secondary level between an academically oriented program and a vocational/technical program. In many countries, the vocational/technical program enrolls more than half of upper secondary school students.

Classrooms, Instruction, and Funding

- Classroom size varies considerably across countries, with the United States in the lower-middle part of the range at the elementary and secondary levels.
- The number of days per school year ranges from 173 in Ireland to 222 or more in Taiwan, Korea, and Japan. The United States is close to the low end, with an average of 178 days.
- Students in the United States devote less time to homework than students in many other nations. Only 29 percent of U.S. 13-year-old students report

spending two hours per day on homework. France, Italy, Israel, Ireland, Spain, and the former Soviet Union reported that 50 percent or more of their 13-year-old students did this much homework. However, the association between amount of homework reported and scores on international tests was not strong.

- The United States spent more (including both public and private expenditures) per pupil at the elementary and secondary school levels in 1988 (the latest year for which data are available)—$4,131—than any other nation except Switzerland.

Student Performance Assessment Systems

- With the exception of the United States, most countries have national or state examinations, which are "high stakes" (tied to graduation or entrance) *and* require mastery of subject matter. In the United States, many states have "high-stakes" exams, but they are tied to minimum competency levels.

- Only the United States relies heavily on standardized tests. The United States is the only nation in which commercial test publishers play a central role in defining examination content and developing test instruments. Further, most other countries have students write out answers to questions in essay form; some require oral examinations or practical demonstrations of skills mastered.

- Grades and test scores go on employment resumés in many European countries. In Japan, school recommendations are the passport to entry-level jobs at the best firms. In the United States, employers generally know only whether a student completed high school.

Student Achievement

- The recent International Assessment of Educational Progress (IAEP 1992) showed that U.S. 13-year-olds rank 14th out of 15 countries in mathematics knowledge, and 13th in science.

- A recent international geography study found that the United States is the only country in which young adults know less geography than do older adults.

- The United States is at about the mean (73.7 percent) on a recent measure of secondary school completion in developed countries. The highest ratios are found in Finland, Germany, and Denmark.

- The United States has the highest postsecondary enrollment ratio in the world. Most countries' enrollment ratios are less than half that of the United States.

Education Reform

- Many developed nations, including the United States, have focused current reform efforts on the content and quality of curriculum, standards of achievement, and the effective management of classrooms to achieve desired learning outcomes.

- At the primary school level, most developed countries are involved in one or more of the following reforms: improving curriculum in core subjects, integrating technology into classrooms, strengthening testing and student accountability systems, broadening understanding of the environment and other cultures, and developing cognitive skills in every aspect of the curriculum.
- At the secondary level, a number of countries are working to strengthen their vocational education programs to develop a work force with skills and knowledge that enable them to adapt to the demands of a global economy.

International Education Comparisons

I. Introduction

Since the early 1980's, the results of international comparisons of academic achievement have been a stark reminder that something is wrong in American education. It is probably fair to say that these comparisons, combined with domestic assessments of our schools' problems and fears about waning economic competitiveness, are among the main reasons for a new interest in education reform, culminating in the establishment of six national education goals and AMERICA 2000, President Bush's bipartisan strategy for reaching the goals.

Clearly, there is much that we can learn by comparing our system with those of other countries. Issues such as national standards, testing, and school choice are integral parts of other countries' education systems. Moreover, several countries consistently rank at the top on international comparisons of education achievement. These briefing materials compare features of the U.S. education system with those of other countries at similar levels of economic development, especially the nations of Europe, North America, Asia, and the Pacific that belong to the Organization for Economic Cooperation and Development (OECD). Limited examples from non-OECD countries and less-developed countries are included where judged useful.

II. Structure and Governance

A. Structure of School Systems

Preschool. *Preschool systems vary greatly in developed nations,* ranging from a comprehensive system like that in France, where virtually all children age 3 and older are in preschool, to ones like Switzerland, where only 19 percent of 4-year-olds are in preschool. The average of 4-year-olds in preschool is 59 percent among developed nations reporting to OECD. The United States is somewhat below the average, with 49 percent of U.S. 4-year-olds in preschool programs. Of course, many children may be in child-care arrangements that do not provide education, both in the United States and in other countries. About 40 percent of U.S. children in preschool education programs attend publicly supported programs.

The differences in preschool participation may reflect different cultural attitudes toward the value of early childhood socialization and education outside the home, or differences in the percentage of women in the labor force. Some nations, like France, strongly support preschool, while citizens of other nations, like Switzerland,

believe very strongly that young children should remain at home for early childhood development.

TABLE 1
Percent of Children Enrolled in Preschool, by Age[1]

(Ordered by Percent in Preschool at Age 4)
School Year 1987–88

Nations	Age 2	Age 3	Age 4	Age 5[2]	Age 6[2]
France	36%	96%	100%	100%	2%
Belgium	22	94	98	97	3
Netherlands	NA	NA	98	99	NA
Spain	5	18	91	100	NA
New Zealand	9	43	73	1	NA
Germany	9	32	72	87	80
United Kingdom	1	26	69	NA	NA
Austria	1	29	63	92	24
Japan	NA	16	55	64	NA
Ireland	NA	1	52	96	52
United States	NA	29	49	87	15
Norway	23	32	44	53	64
Greece	NA	9	43	57	1
Canada	NA	NA	41	69	11
Yugoslavia	19	19	23	36	13
Finland	20	16	20	24	48
Switzerland	1	5	19	67	78
Denmark	NA	NA	NA	NA	97
Average for age 4 (mean)			59		

Source: *Education in OECD Countries, 1987–88: A Compendium of Statistical Information*, Paris 1990.

Note: NA means "not applicable" or that the amount is minimal.

[1]Cultural attitudes about entering young children in preschool vary considerably. France is strongly committed to preschool and provides it for children age 2 and older. This situation contrasts with Switzerland, which encourages children to remain at home until age 5.

[2]Some nations enroll children in primary school by age 5 (e.g., Great Britain, New Zealand).

Primary School. *Primary education structures and attendance patterns do not vary as much as those for preschool or secondary education.* Most developed nations have very high percentages of children attending primary schools. All developed nations start compulsory schooling at age 6 or 7, except for Great Britain, the

Netherlands, and Greece, which start at age 5 (OECD 1990). Some nations use junior high/middle schools, while others extend elementary school through the middle grades. In most cases, around age 12, children are either attending an upper primary program such as a middle school or starting a lower secondary education program.

Secondary School. Secondary systems vary widely among developed nations, with three modes of operation predominating.

- A few nations—the United States, Canada, and, to some extent, Japan—establish high schools that aim to provide a broad education for all students. While secondary students may concentrate on either vocational or college preparatory courses, they all participate in an academic program of instruction.
- A number of developed nations have established a *partly differentiated secondary school system,* in which younger adolescents go to general purpose schools and older adolescents enter separate schools that concentrate on either college preparation or vocational preparation. Some of the nations with this structure are Great Britain, Australia, France, Sweden, and Italy.
- Finally, some nations have a *highly differentiated secondary school system* starting at early adolescence, in which students go to either academic or vocationally oriented high schools. Vocational schools are often closely related to apprenticeship and part-time employment programs. Nations with this type of secondary system include Germany, Austria, Switzerland, and the Netherlands.

The age at which students leave secondary school also varies widely, although compulsory schooling tends to end at age 15 or 16 in most countries (OECD 1990).

B. Governance

The United States has a highly decentralized education system administered and supported substantially by states and local communities. Many other countries have a strong national ministry of education that provides direction and substantial funding for schools. Countries with particularly strong national ministries include Japan, the Netherlands, Sweden, and France. The national or regional ministry typically

- sets curriculum standards, sometimes in considerable detail;
- sets requirements for class size, teacher qualifications, and other administrative requirements;
- sets specific requirements for examinations for entry into upper secondary school or higher education, including entrance to universities or technical/vocational institutes;
- may set requirements for textbooks;
- provides oversight through inspectorates that evaluate schools and local administrative structures; and

- provides significant funding for teacher salaries, construction, and operating expenses, and regulates how local governmental divisions fund schools. (In most of the countries in this analysis, funding is available to parochial and other private schools as long as these schools accept government regulation in areas such as teacher qualifications, facilities, student assessment, and, in some cases, curriculum content.)

Relationships with local municipalities or civil divisions tend to be directive, with the national ministry having considerable authority over policy and administration. Local school boards and advisory committees are widespread, however, permitting local participation and adjustment for local community needs, including control over modifications to the curriculum.

Strong regional ministries that have much of the same authority as national ministries in centralized countries are present in Australian states, Canadian provinces, Swiss cantons, and German länder. These ministries have considerable responsibility for education, providing substantial funding and direction for primary and secondary schools and arranging for regional examinations. The level of national control varies. Canadian provinces act independently of each other, while the Australian, Swiss, and German states accept more national direction. The national ministries in these countries serve to coordinate assessments, ensure that qualifications provided in one state are acceptable in others, and, in some cases, provide curriculum frameworks and guidance.

Examples of School System Governance in Several Countries

Canada: The Canadian system is highly decentralized to the provincial level. Each of the provinces determines policy for schools within its boundaries. In some cases, the provincial governments fund the schools from general revenues; in others, revenues from local property taxes and general province revenues are used. Primary and secondary schools are operated by local school boards that may be elected (most provinces) or appointed. Financial support is often provided to private schools. Ontario provides minority-language groups with the right to govern their own schools, within existing school boards. Canadian schools are similar to those of the United States in structure. Canada has comprehensive secondary schools, with some vocational training available.

Germany: Germany's system is decentralized to the länder (state) level, with some variation in structure between the states. Most states have established similar systems with general primary schools, differentiated lower and upper secondary schools, strong differentiation into academic and vocational channels, and an extensive system of part-time vocational education and part-time work in apprentice programs. Final examinations from the different schools are developed and administered by the states. A standing Conference of State Ministers of Education coordinates policy and programs. Although secondary school starts at grade 5 in Germany, the Conference introduced an orientation level at grades 5 and 6 that has been adopted by many of the states and provides for a general curriculum that enables students to transfer among the various types of schools. The states also

coordinate the comprehensive examinations at the end of academic secondary school—the Abitur—and have established agreements that students who qualify based on the Abitur and course grades from academic secondary schools can be admitted to any university with an appropriate program. The Abitur varies from state to state with respect to course requirements and date given. The state governments exercise extensive powers over education, leaving limited opportunities for decision making to local governments or schools.

Japan: The Ministry of Education, Science and Culture (Monbusho) provides national leadership and direction for education, working with local prefectures and municipalities that manage and fund schools. Monbusho sets national curriculum standards for primary and lower and upper secondary schools; provides professional and technical guidance; prepares detailed guidebooks on teaching materials; provides free textbooks; and approves textbooks. Monbusho also provides guidance on local administration, class sizes and staffing ratios, and teacher salaries and certification. Monbusho provides support for one-half of local teacher salaries and up to half of construction and one-third of renovation costs, and provides financial assistance to private schools, which serve 80 percent of kindergarten pupils and 30 percent of upper secondary students. Local prefectures are central education authorities that provide guidance and funding (including teacher salaries) to municipalities, organize examinations, and administer upper secondary schools. Municipalities administer primary and lower secondary schools and finance other operating expenses for the schools.

Netherlands: The national government provides significant or total support for staffing and facilities in public and private schools. Every municipality is the authority responsible for public schools within its boundaries. School boards are the authorities established for private schools. There are more than 6,300 "authorities" in the Netherlands. Public schools are about one-third of the total. Private schools include Roman Catholic, Protestant, non-denominational, and a small number of Muslim and Hindu schools.

The national government funds most schools, public and private, providing staffing, capital, and operating expenses. In return, schools accept extensive regulations regarding staff, instruction, and facilities. The rules cover the subjects to be taken, minimum time spent on subjects, examination syllabi, and national examinations. Because of the extensive national regulation, students are ensured that if they attend a particular type of school, the qualification they receive will always be recognized by other parts of the school system.

To delay students' early choice of secondary schooling programs, a "transition" year was added to the curriculum to bridge the gap between primary and secondary school and to link the various types of secondary schools. Important tests that provide access to universities and to higher vocational/technical education programs are administered at the end of secondary school.

Basic education is supported by tax revenues and small fees charged to parents. Private schools also may charge additional fees, although such fees must not present an obstacle to pupil admission.

United Kingdom: The Department of Education and Science has responsibility for education in England and Wales. In practice, the Secretary does not control local authorities, although the Department can issue regulations that have the force of law on such areas as minimum standards for teachers, required financial support to schools, allocation of national funds to local education authorities, and standards for facilities. The Department also has a cadre of inspectors who evaluate schools and teachers.

Local education authorities are local elected councils with education committees responsible for schools. Local property taxes are a primary source of funding. The councils may fund denominational and other private schools, in return for compliance with local requirements. Fees may be charged by private schools. England has a number of completely independent private schools as well as the schools that receive partial public funding.

C. Private School Participation

The percentage of students who study in "private" schools varies dramatically from country to country. Parents in many European countries may choose to enroll their children in schools run by nongovernmental authorities that receive public funding. These schools are typically, but not universally, operated under religious auspices.

- The percentage of students in privately controlled elementary and lower secondary schools in most OECD countries is small (less than 10 percent), although 33 percent of primary students attend private schools in Spain, 25 percent in Australia, and 15 percent in France, where nonpublic schools may choose among varying degrees of state funding in exchange for varying degrees of state control (OECD 1990).

- The countries with the highest proportions of primary students in private schools are Belgium (55.6 percent) and the Netherlands (over two-thirds of the student population). In both of these countries, public and privately run educational institutions are wholly state-funded.

- In the United States, about 11 percent of primary students attend private schools (OECD 1990).

D. Parental Choice of Schools

Choice of schools varies considerably among developed nations. As noted above, most nations provide financial support for religiously affiliated and (usually few) other private schools. In most cases, there is little public debate or concern about this type of funding (France is a major exception). However, in many nations, choice among public schools is quite limited. Thus, parents may be able to choose between a local public school and a local parochial school, but not among public schools or among a variety of local schools of all types. Major exceptions include Great Britain, which has embarked on a major choice program, and the Netherlands, with a constitution that provides for extensive choice of schools.

In addition, most nations that support private schools, including religiously affiliated schools, regulate those schools with respect to teacher qualifications, physical requirements such as class size and facilities, and student assessment. Control over curriculum content varies from considerable control to limited influence.

Examples of Parental Choice Systems

England and Wales. Parental choice in British schools was established recently by a major education reform law. The Education Reform Act of 1988 was passed over the objections of many in the education establishment, and its implementation is still controversial. The issue is not, by and large, related to religion. Religious diversity has been long supported within the public school system for Anglican, Catholic, and Jewish schools. Many public schools in Britain include religious instruction, and local "voluntary" schools with religious affiliations have been supported as a special form of public schools for many years. There has also been increased interest by some evangelical and Muslim schools in obtaining public support.

Provisions of the act were based on the principle of market forces to improve education standards. There were three main components—open enrollment, the ability of local schools to "opt out" of local control entirely, and the establishment of "city technology colleges" to provide high-quality academic and technical education. The law introduced a national curriculum that specifies attainment targets for each subject area, provides for increased student testing, and gives greater emphasis to vocational education.

Local authorities are now required to enable parents who wish to move their children to another school of any type to do so. Bright children of limited financial means can be sent to independent private schools, including boarding schools. Local support must include tuition and other fees; parents must provide transportation. Local authorities can restrict parents' choice if it would "prejudice the provision of efficient education," however, and it remains to be seen how much this will restrict the effect of this reform program.

One especially innovative aspect was the decision to permit local schools to apply for funding directly from the national government—"opt out"—and become independent of local school authorities. The national government would obtain funds from the local school authority to cover the expenses of the newly independent schools. The schools cannot change their character, however, so that a religiously affiliated school could not opt out and change to a secular school.

The Reform Act also authorized a number of "city technology colleges" that provide a balanced, diverse curriculum of academics and vocational training linked through subject matter and work experience to industry and high-tech emploment.

France. The French system is one that provides considerable financial support for religiously affiliated schools, especially Catholic schools. However, within the public school system there is limited choice due to sharply limited school attendance zones and requirements. As in the United States, French parents may move to enable their children to attend preferred schools. During the 1980's, reformers

promoted the idea of more parental choice, and there have been some experiments with flexibility in attendance zones.

Private schools in France may choose to (1) remain completely independent of government intervention except to employ qualified teachers, (2) accept government equirements for curriculum and testing in exchange for staff salaries, or (3) accept some government control over pedagogy and teacher selection in return for operating expenses as well as salaries. Most Catholic elementary schools choose the second arrangement, while Catholic secondary schools, with higher operating expenses, choose the third.

Germany. Germany provides substantial support for religious and other private schools. Because local communities tend to be either Protestant or Catholic, the local public schools might be one or the other. Children of different faiths must be provided alternative religious instruction. This arrangement varies among the German states, with some having more religiously affiliated schools than others. In recent decades more states have established secular public school systems, although with support still provided to private religious schools.

Notwithstanding the involvement of church institutions, the states have strong control over education. Private schools are subject to close government supervision and must meet public schools standards in all respects.

Netherlands. Educational freedom is written into the Dutch Constitution and education laws, which guarantee the freedom to any "responsible authority" to provide education, including teacher appointments and selection of curriculum. Government oversight is limited to quality and the moral character of teachers. Responsible authorities include governments, church councils, industry and other associations, and other institutions and organizations. The government pays all teacher salaries and does not permit local supplementation. Private schools may seek contributions from parents for supplemental services. Municipalities are encouraged to provide transportation. School enrollments may become very small before schools are ineligible to receive funding.

While there are public school attendance districts, parents may choose other public schools for their children by giving written notice to local municipal authorities. Notwithstanding the freedom allowed to Dutch schools, both in opportunity to incorporate and in the curriculum used, an extensive set of laws and regulations restricts all schools. Detailed prescriptions are made on the minimum and maximum number of lessons a week, class size norms, required competencies of teachers, student assessment, and other areas. Government inspectors ensure that the regulations are met, but have no authority in instructional content with the exception of vocational schools that must respond to standards for student competencies.

III. Characteristics of Education Systems

Beyond governance and structure, the U.S. education system can be compared with those of other developed countries on a range of important dimensions, including the size and makeup of the school population, existence and differentiation of national curriculum, classroom factors such as the amount of time devoted

to instruction, and the rewards and consequences of schooling. These characteristics are discussed in separate sections below.

A. Characteristics of School Populations

Size and Enrollment Ratios. *The sheer size of the educational enterprise in the United States distinguishes it from the systems of other developed nations.*

- In 1988, elementary and secondary education was provided to 45.4 million U.S. students (not including preschoolers). The next largest school population among developed nations was Japan's (with 23.2 million students); no Western European country had more than 13 million (UNESCO *Statistical Yearbook* 1991, *Digest of Education Statistics* 1991; in 1988, before the breakup of the Soviet Union, that nation had 46.1 million students in primary and secondary education).

- *Despite the large size of our school population, our enrollment ratios for primary and secondary schools are similar to those of most other developed nations—virtually all children of school age are in school.* At the secondary level, the enrollment ratio for the United States is 92 percent; the United Kingdom, at 83 percent, and Italy, at 76 percent, are lower, while countries like Japan, Germany, Australia, and the Netherlands are somewhat higher on this measure (*Digest of Education Statistics 1991*).

- Likewise, our more than 10,000 institutions of higher education (including two- and four-year colleges and universities and trade and technical schools) enroll more students than those of any other nation. Our postsecondary enrollment ratio (64.5 percent) is much higher than that of other nations (see "Outcomes of Education," below).

Ethnic Diversity and Gender Differences

- **Ethnic diversity.** *The United States has an ethnically, racially, and religiously diverse student population. Many other countries are quite homogeneous.*
  - At least 90 percent of children in Korea, Japan, Hungary, France, Scotland, and Ireland, for example, come from a single ethnic and language group.
  - However, countries like Australia, Canada, Spain, and Switzerland have ethnic or linguistic minorities that comprise more than 10 percent of the population. Moreover, in the large industrial areas of countries such as France and Germany, student populations are as diverse as those in the United States.

- **Female participation rates.** In primary and lower secondary schools, boys and girls are represented about equally in most developed countries. *Significant differences among developed nations are found, however, in the proportion of girls who enroll in undergraduate and graduate postsecondary institutions.*

- *In the United States, 51 percent of undergraduate (baccalaureate-level) students are female*—similar to France and Canada (54 percent), Norway, Spain, and New Zealand (50 or 51 percent), but contrasted with only 38 percent in Germany and 25 percent in Japan (1986 OECD figures).
- *The United States has the highest female participation rate (about half of all students) in postgraduate study of any of the countries in the survey.* In Japan, at the other extreme, only 15 percent of graduate students are women (OECD 1990).

B. Curriculum Characteristics

National Curriculum. *The United States is one of very few developed countries without extensive oversight and direction of curriculum by national authorities.* It is not true, however, that all other countries have national curricula. In Australia, Canada, Germany, and Switzerland, for example, the states or provinces have significant powers.

- Among the 16 countries surveyed as part of the International Assessment of Educational Progress (IAEP), only the United States, Canada (with curriculum prescribed at the provincial level), and Switzerland (where education is regulated by the 26 cantons) have no national curriculum.
- In the Federal Republic of Germany (not included in the IAEP study), each of the separate states develops its own curriculum, but there is a national examination.

Differentiation of Secondary Curriculum. Unlike the United States, many developed countries differentiate schooling at the upper secondary level between a college-oriented academic program and a vocational/technical program (one designed to prepare students directly for a particular trade or job). In addition, there is increasing emphasis on upper secondary technical programs that prepare students for postsecondary technical training.

- In most countries, the academic program provides students with the best chances of gaining entry to postsecondary education, although the links between strong technical secondary programs and university education are becoming stronger. In Germany, the secondary-level technical programs provide a significant number of entrants to university engineering and scientific programs.
- *Nevertheless, the vocational/technical program enrolls more than half of upper secondary students in many countries.* In Germany and Italy, for example, there are more than 2 million students each in vocational/technical education, and only about 600,000 each in academically oriented schools (OECD 1990). It should be noted that in some countries like France and Germany, the vocational/technical programs require students to master academic skills also.
- Like the United States, Canada, Australia, New Zealand, and Portugal are among OECD countries in which almost all students attend secondary schools whose program of study is comprehensive in nature, with primary emphasis on academics along with some vocational training.

TABLE 2
Characteristics of Education and Achievement in 18 Countries

	Rank on IAEP Math Test	Rank on IAEP Science Test	Average Days of Instruction Per Year	Average Class Size	Two or More[1] Hours of Homework a Day	National Curriculum
China[2]	1	14	251	48	44%	Yes
Korea	2	1	222	49	41%	Yes
Taiwan	2	2	222	44	41%	Yes
Switzerland	4	3	207	18	20%	No
Soviet Union[3]	5	5	198	22	52%	Yes
Hungary	6	4	177	27	58%	Yes
Italy[4]	7	6	204	21	79%	Yes
France	7	9	174	25	55%	Yes
Israel[5]	9	6	215	32	50%	Yes
Canada	10	9	188	25	27%	No
England[6]	11	9	192	22	26%	Yes
Scotland	11	12	191	24	14%	Yes
Ireland	11	16	173	27	63%	Yes
Slovenia	14	6	190	25	28%	Yes
Spain[7]	15	12	188	29	64%	Yes
United States	15	14	178	23	29%	No
Portugal[8]	17	16	172	25	30%	Yes
Japan[9]	NA	NA	210+	38	NA	Yes

Source: International Assessment of Education Progress (IAEP) 1992. Data taken from country, school, and student questionnaires.

[1]Percent of students who report spending two or more hours a day on homework.

[2]20 provinces and cities.

[3]Russian-speaking schools in 14 republics.

[4]Emilia-Romagna region.

[5]Hebrew-speaking schools.

[6]Low response rate. Data should be used with caution.

[7]Spanish-speaking schools except in Catalonia.

[8]Low response rate. Data should be used with caution.

[9]Number of days required by the Ministry of Education. Japan did not participate in the IAEP. Data from Ishizaka Kazuo, School Education in Japan, 1988, International Society for Education.

- *In a number of countries, the last years of secondary schooling may be part time, with employment and apprenticeships replacing classroom instruction.* This practice varies considerably across countries, with part-time students at age 17 representing only a few percent in Japan, Belgium, and the United States, but more than 20 percent of 17-year-olds in Australia, 30 percent in Great Britain, 50 percent in Austria and Germany, and 67 percent in Switzerland (1987 data, OECD 1990a).

C. Characteristics of Classrooms, Instruction, and Funding

Classroom Size. *Classroom size varies considerably across countries and age groups, with the United States in the lower-middle part of the range on most comparisons.*

- Average class size of 13-year-olds taking mathematics, as reported by the IAEP, ranges from 18 in Switzerland to 49 in Korea. The United States, at 23, was in the lower-middle part of the range (IAEP 1992).

- For secondary schools, the pupil-teacher ratio is lower than the elementary ratio for almost all nations, but the order of nations is similar (UNESCO 1991, *Digest of Education Statistics* 1991).

Time Spent in Instruction. Time available for learning varies according to the length of the school year, the length of the school day, and the proportion of the school day devoted to instruction.

- *The average number of days of instruction per year varies* across countries, ranging from 173 in Ireland and 178 in the United States, at the low end, to 222 in Taiwan and Korea, at the high end (see Table 2).

- Japanese schools are required by the Ministry of Education to provide at least 210 days of instruction per year, including a half day on Saturdays (about 195 days of actual instruction); local boards have discretion to increase this number, however, and commonly specify a total of 240 days, which allows for field trips and sports and cultural festivals (U.S. Department of Education, *Japanese Education Today,* 1987, other sources). However, Japan is now considering decreasing the number of days in the school year by eliminating Saturday classes.

Homework Time. *Students in most countries appear to devote more time to homework than do typical U.S. students.* However, the amount of time students report spending on homework varies and appears to be only weakly associated with scores on international tests.

- According to the IAEP, 50 percent or more of the students surveyed reported spending at least two hours on all homework every day in the former Soviet Union, Hungary, France, Italy, Israel, Ireland, and Spain.

- In the United States, only 29 percent of students reported that they did this much homework, and students in Switzerland, Scotland, Slovenia, and Canada reported doing less than this amount (see Table 2).

Expenditures Per Pupil. Expenditures per pupil (in U.S. dollars) vary considerably among developed countries.[1]

- In 1988 (the most recent year for which comparable data are available), *the United States spent more per pupil ($4,131) (including public and private expenditures) at the elementary and secondary* level than any nation except Switzerland ($4,315) (see Table 3).[2]

- In contrast, in the same year, New Zealand spent $1,541; Japan, France, Germany, and the Netherlands all spent between $2,100 and $2,300; and the United Kingdom, $2,768. Canada, at $3,791, was third.

D. Rewards and Consequences of Student Performance

Most of our competitor nations offer important rewards and/or consequences for what is learned in school. For the most part, students in the United States—except for those students hoping to attend prestigious colleges and universities—do not receive clear, effective signals of the importance of working hard and doing well in school.

Student Performance Assessment Systems

- *There is greater emphasis on examination of student performance for the purposes of graduation, placement in higher education programs and careers, and certification of mastery of skills in other countries than in the United States.*
  - Many U.S. states now have minimum competency requirements for high school graduation, but most state exit examinations do not require mastery of a subject. However, commercial exams such as those used in the College Board's Advanced Placement program do require students to demonstrate a high level of competency in order to receive a "passing" score.

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[1]The issue of differences of funding levels across states, regions, and provinces within each country is not covered in this document. Although an important issue, information to examine disparities in funding within the countries is not available. In addition, comparison of teacher salaries, although useful, was not included because of the lack of data. Data were not available to adjust for differences in the length of teacher contracts as well as for compensation packages (e.g., health insurance and pensions). As noted by Barro (1988), international comparisons of teachers' salaries are extremely difficult to do without the data to make the proper adjustments.

[2]Data recently released by the OECD reveal a slightly different ranking on per pupil public expenditures, but confirm that the United States spends as much as, or more than, any of its major economic competitors per elementary and secondary pupil (OECD 1992). Other calculations of per pupil spending, such as that done by the American Federation of Teachers, have provided somewhat different findings than the ones presented here. These differences are primarily due to the fact that, where available, both public and private expenditures are included in the calculation in this report. Some other calculations reflect only public expenditures for all students (including those in private schools); such a method underestimates the average per pupil expenditures for the United States.

TABLE 3
International Comparison of Education Expenditures[1]

Country	Year	Per Pupil[2,3] Expenditure	Rank
Switzerland	1988	$4,315	1
United States	1988	$4,131	2
Canada	1988	$3,791	3
Norway	1988	$3,716	4
Denmark	1988	$3,671	5
Sweden	1988	$3,466	6
Austria	1988	$2,939	7
United Kingdom	1988	$2,768	8
Belgium	1987	$2,262	9
Netherlands	1988	$2,261	10
France	1988	$2,221	11
Japan	1988	$2,200	12
Germany (FRG)	1988	$2,168	13
Australia	1987	$2,065	14
New Zealand	1988	$1,541	15
Ireland	1987	$1,365	16

Data sources: U.S. data were taken from the Digest of Education Statistics, 1991. All other data are calculated from the UNESCO Statistical Yearbook, 1991.

[1]The figures in Table 3 represent current spending on preprimary, primary, and secondary education, divided by the number of pupils enrolled at these levels. Conversion to U.S. dollars was done using the Purchasing Power Parity (PPP) Index, developed by the Organization for Economic Cooperation and Development (OECD). Data on the 1988–89 school year were obtained from the 1991 Digest of Education Statistics (for the United States) and the 1991 UNESCO Statistical Yearbook (for all other countries). The result is per pupil expenditures in comparable U.S. dollar terms.

[2]Based on those portions of current expenditures and enrollments identified by countries as attributable to pre-primary, primary, and secondary schools. (U.S. pre-primary figures include spending and enrollment only for kindergartners and those younger children enrolled in preschool programs run by public elementary schools, while data for other countries tend to include a wider range of preschool programs.) U.S. data include public and private spending for public and private schools. Since virtually no public funds can be spent by private schools in the United States, to look only at public spending for all students would significantly bias (down) the U.S. per pupil figure. Japan also reports combined public and private spending. In most other countries, the vast majority of funds expended for primary and secondary education come from public sources and may be used to support the activities of both public and "private" schools.

[3]Currency conversion: The 1988 GDP PPP Index was used to convert currencies for all countries except Ireland, Australia, and Belgium, for which the 1987 GDP PPP Index was used. The PPP Indexes were produced by the Organization of Economic of Cooperation and Development, 1990.

- *In contrast, national or state examinations, including exit examinations, are tied to curriculum in nearly every other country,* conveying the idea that mastery of school subjects—not just minimum competency—is important. Public release of student scores strongly influences students, teachers, and parents.

- In most countries, including Japan, options for upper secondary schooling depend primarily on a child's performance in lower secondary school, including examinations. However, "high-stakes" examinations administered by external authorities have been all but eliminated for students under age 16 in developed countries in Europe (Office of Technology Assessment 1992).

- *Only the United States relies heavily on standardized tests* for students, and we are the only nation in which commercial test publishers play a central role in defining examination content and developing assessment instruments (Office of Technology Assessment 1992).

  - Only the Japanese are like the United States in making extensive use of multiple choice-type exams (but not for young children) for purposes of accountability and admission decisions. "High stakes" Japanese exams typically combine multiple-choice and essay formats.

  - Most other countries have students write out answers to questions in essay form; some require oral examinations or practical demonstrations of skills mastered (National Endowment for the Humanities 1991).

Grades and Other Student Assessments as Passports to the Future

- *Grades on examinations and in school subjects go on employment resumés in many European countries.* And in Japan, Germany, and other countries, for the non-college-bound, school recommendations are the passport to entry-level jobs at the best firms. In the United States, employers generally know only whether a student completed high school. A recent study showed that less than 20 percent of employers asked young job applicants for their grade-point average in secondary school (Bishop 1990).

- *In other countries, school grades are major determinants of who gets coveted apprenticeships or spots in universities and particular fields of study.*

  - "Parents in these [other] countries know that a child's future depends critically on how much is learned in secondary school and demand and get more from their local schools" than do U.S. parents (Bishop 1990).

  - In these systems, however, it can be very hard for students to change "tracks." The United States takes pride in providing a "second chance" for postsecondary education for those beyond the "normal" age or those previously in terminal vocational programs.

IV. Outcomes of Education

A. Achievement on International Assessments

The consistently low rankings of the United States in international assessments of mathematics and science achievement have been widely publicized. This disappointing performance appears to point to a real "knowledge gap" between U.S. students and their counterparts in many other countries.

- The recently released International Assessment of Education Progress (IAEP) shows that *U.S. 13-year-olds rank 14th out of 15 countries in mathematics knowledge, and 13th in science* (see Tables 4 and 5). Moreover, several studies conducted during the 1980's by the International Association for the Evaluation of Education Achievement (IEA) reported that U.S. students compared poorly on international comparisons of math and science achievement.

- A recent international assessment of geography knowledge also concluded that U.S. youth are woefully ignorant of the world around them. Most alarming, *the United States is the only country tested in which young adults know less geography than do older adults.*

- These comparisons may, however, be affected by small and insignificant differences between countries. For example, in the 1991 science study of 13-year-olds referred to above, although the United States ranked 13th out of 15, *performance of U.S. students was actually statistically indistinguishable from that of students in eight other countries. While 13-year-olds in Ireland and Jordan performed worse, only those in four countries actually performed better.*

- Aside from the IAEP, recent research by Harold Stevenson and his associates confirms that the "math gap" between U.S. students and those in three Asian countries (Japan, China, and Taiwan) *is evident as early as kindergarten, and widens by fifth grade.* Yet, in an accompanying survey, Asian parents expressed *less* satisfaction with their children's abilities and were *less happy* with the job their local schools are doing than American parents.

B. Graduation and Postsecondary Enrollment

- *On a recently calculated measure of upper secondary graduation rates in OECD countries, the United States (73.7) is at about the mean (72.7).*
  - The highest ratios are found in Finland, Germany, and Denmark; the lowest in Turkey and Italy. Canada's graduation rate is similar to that of the United States (OECD 1992, see Table 6).
  - It should be noted that the graduation rate cited for the United States does not include the substantial numbers of students who do not complete high school "on time," but return later and obtain a GED or a high school equivalency certificate.

TABLE 4
International Comparisons of Mathematics Achievement for 13-Year-Olds

Source	Age	Year of Survey	Test Score Comparisons: Higher than U.S.	Same as U.S.	Lower than U.S.
I.	13	1991	Korea, Taiwan Switzerland Soviet Union Hungary, France Israel, Canada Scotland, Ireland	Slovenia Spain	Jordan
II.	13 (arithmetic)	Early 1980's	Japan, Netherlands Canada (B.C.), France Belgium, Israel England and Wales	Hungary Belgium (French) Hong Kong Canada (Ontario) Scotland, Nigeria Swaziland	New Zealand Finland Luxembourg Thailand Sweden
	13 (measurement)	Early 1980's	Japan, Hungary Netherlands, France Belgium, Hong Kong Canada, Finland Luxembourg, Sweden England and Wales Scotland, Thailand Israel, New Zealand	None	Swaziland Nigeria

Sources:

I. *Learning Mathematics*, IAEP, 1992; unpublished tabulations. (Switzerland: 15 cantons; Soviet Union: Russian-speaking schools; Israel: Hebrew-speaking schools; Spain: Spanish-speaking schools except in Catalonia.)

II. IEA Second International Mathematics Study. Results from *International Mathematics and Science Assessments: What Have We Learned?*, NCES, 1992.

- *At the postsecondary level the U.S. enrollment ratio is extremely high* and is approached only by that of Canada. Most countries' ratios of enrollment to the number of 20- to 24-year-olds in the population are less than half that of the United States. The lowest reported ratios are those of Portugal and the United Kingdom (*Digest of Education Statistics* 1990. See Table 7; also see note on interpreting these data). It should be noted, however, that in some developed countries, the curriculum in the final years of secondary school is equivalent in difficulty to the curriculum in the beginning years of college in the United States.

TABLE 5
International Comparisons of Science Achievement for 13-Year-Olds

Source	Age	Year of Survey	Test Score Comparisons	
			Higher than U.S.	Same as U.S.
I.	13	1991	Korea, Taiwan Switzerland, Hungary	Soviet Union Slovenia, Israel Canada, France, Scotland, Spain
II.	14	Mid 1980's	Hungary, Japan Netherlands, Canada Finland, Sweden Korea, Poland Norway, Australia	England Singapore Thailand Hong Kong

Sources:

I. *Learning Science*, IAEP, 1992; unpublished tabulations. (Switzerland: 15 cantons; Soviet Union: Russian-speaking schools; Israel: Hebrew-speaking schools; Spain: Spanish-speaking schools except in Catalonia.)

II. IEA Second International Science Study. Results from *International Mathematics and Science Assessment: What Have We Learned?*, NCES, 1992.

V. Education Reform

In the 1980's and early 1990's, developed nations focused reform efforts on the content and quality of what was being taught in schools, standards of achievement, community and parent needs, and the effective management of classrooms to achieve desired learning outcomes (OECD 1990b). Public accountability was emphasized, as was an insistence that schools and instructional practice should support the economic needs of the nation. Schooling is now being treated in strategic terms by governments that seek to restructure or steer their economies. The content of schooling and the methods used in teaching students have become issues for government policy making and intervention, and have not been left to teachers. Several countries in addition to the United States have established national goals for education.

A. Elementary School Reform

At the elementary level, at least five areas of reform are being debated (examples of countries involved in each area of reform are in parentheses) (OECD 1990b):

1. "Back to basics"—how to ensure that basic core curriculum subjects are well taught to all pupils (Canada, France, United States).

TABLE 6
Secondary School Graduation Ratio, 1988[1]

Comprehensive Schools throughout Secondary Education	
Japan	89.5
United States	73.7
Comprehensive Lower Secondary with Differentiated Upper Secondary	
Canada	67.9
Denmark	104.7
Finland	116.3
France	84.5
Italy	43.2
Norway	58.1
Spain[2]	56.0
Sweden	80.9
Turkey	22.1
United Kingdom	65.1
Differentiated Lower and Upper Secondary	
Austria	54.7
Germany	112.1
Ireland	82.0
Luxembourg[3]	52.3
Netherlands	56.9
Switzerland[4]	87.9
Mean	72.7

Source: OECD 1992.

[1]Ratio of number of students who successfully fulfill formal secondary school graduation requirements (receiving a credential, certificate, or degree) to the number of people at theoretical ending age (17, 18, or 19 depending on the country).

[2]Data include both types of vocational education (the shortest one, FP 1, of which duration is two years, beginning at age 14 and the longest one, FP 2, of which duration is three years, beginning at age 16).

[3]Some students are enrolled in one of the surrounding countries.

[4]Estimations.

NOTES ON INTERPRETATION

A number of countries had considerable difficulty reporting the data because of the complexities of their upper secondary education systems. Thus, this indicator should be interpreted cautiously.

To the extent that graduates may be older (or younger) than the population at the theoretical ending age, this indicator is not an accurate estimate of the percentage of that population. In countries where the rate is over 100, it is likely that many of the completers or graduates are older than the reference age. Many of these students may have previously completed another upper secondary program.

TABLE 7
Postsecondary Enrollment Ratio[1]
(Total postsecondary enrollment divided by the population 20 to 24 years old)
School Year 1987–88

Country	Ratio of Students Enrolled to Population Age 20–24
United States[2]	68.1
Canada	62.2
Korea (South)	37.7[3]
France	34.5
Netherlands	32.4[4]
Germany (West)	31.8
Spain	31.5[4]
Japan	30.1
Australia	28.8[4]
Italy	26.3
United Kingdom	22.8[4]
Portugal	17.5

Source: *Digest of Education Statistics,* NCES 1991.

Note: These figures should not be interpreted as percentages of the population enrolled because the enrollment figures are not limited to persons 20 to 24 years old. In the United States, about 60 percent of undergraduate students were younger than 20 or older than 24.

[1]The data in this table reflect "third-level" enrollment, or enrollment in college/university education and technical/vocational education beyond the high school level.

[2]Enrollment data and ratios based on data reported by the National Center for Education Statistics and the U.S. Department of Commerce, Bureau of the Census.

[3]Data for 1989.

[4]Data for 1987.

2. The pace at which new technology, especially computers, should be implemented in schools (Australia, France, Japan, United States).

3. How to develop students' cognitive skills in multiple subject areas across the entire curriculum (Great Britain, Italy, United States).

4. How to provide more structure and coherence in the elementary curriculum, more rigorous assessments, accountability for outcomes, and more formal procedures for teaching (Great Britain, Spain, United States).

5. How to foster in children explicit values of concern for the environment and for other peoples (Austria, Japan, Netherlands, United States).

B. Secondary School Reform

At the secondary school level, reform efforts have been focused on building secondary curricula around an enlarged core of compulsory subjects and strengthening vocational/technical education.

- *A number of countries are working to strengthen their vocational education programs.* A critical issue is how to provide flexible, adaptable skills appropriate for the new global economy and a technologically sophisticated work force, rather than narrow trade-based skills.
  - *Australia has linked secondary schools with postsecondary technical institutes,* so that students can develop broad academic skills in high school while taking short "taster" units that give postsecondary credit, either in the technical institute or the high school. Industries are also involved and may provide instruction that qualifies for postsecondary credit.
  - *The United States' vocational education system is undergoing major reforms,* including integrating academic and vocational education, facilitating the transition from school to work, and developing better links between vocational education in secondary and postsecondary schools. The recent reauthorization of the Perkins Act includes several of these reforms, such as requiring states to set performance standards for programs, encouraging "tech-prep" education in two-year postsecondary education programs, and integrating academic and vocational learning.
  - *In England and Wales, the Education Reform Act of 1988 authorized a number of "city technology colleges" (CTC's) that provide a balanced, diverse curriculum of academics and vocational training* linked through subject matter and work experience to industry and high-tech employment. The CTC's give special emphasis to mathematics, science, and technology. They are completely autonomous of local school districts and are expected to strike out in imaginative new directions in curriculum, staffing, and student relationships.
- In countries like Germany and Switzerland, where there is general satisfaction with the highly differentiated secondary curricula that provide extensive vocational training, *reform issues center around continued efforts to increase participation rates in more advanced forms of secondary schooling, including technical education*; efforts to relate curriculum content even more closely to labor market or higher education needs; and efforts to manage resources better.
- In Hong Kong and Korea, there is a movement toward decentralization of administration. Hong Kong's School Management Initiative gives public secondary schools more decision-making authority in exchange for more formal procedures for planning, implementing, and evaluating their activities.

C. National Rather than Local Leadership

One common aspect of recent school reform initiatives has been their national character. In most cases, local communities have not been the main motivating force for renewal, and, for the most part, teachers and local administrators have participated as consultants, not as primary actors. Two methods have been central to many reform efforts:

- *Developing indicators of program quality and school performance,* including redirection or revision of examinations. Examinations traditionally have been powerful mechanisms to influence and standardize curriculum. In most of the English-speaking countries, considerable national attention has been given to reforming assessments along with developing indicators of program quality and school performance.

- *Issuing more comprehensive and detailed curriculum guidelines.* In many cases, teachers and communities are encouraged to become actively involved in translating guidelines into appropriate specific programs.

Examples of Recent National Reform Initiatives

Australia: Several major reform initiatives were started during the 1980's and early 1990's, with collaboration among states and leadership from the national Department of Employment, Education and Training. In 1989, the Australian Education Council of state education ministers met and agreed on a set of national education goals. The goals included providing high-quality education for all youth, developing skills that would permit maximum flexibility and adaptability in future employment and life, providing for groups with special learning requirements, and developing support for lifelong learning.

The Council agreed to support an Annual National Report to monitor schools' achievements and progress toward meeting the national goals, to collaborate on national curriculum frameworks, and to support an initiative to improve the quality of teaching.

England and Wales: As described above under examples of choice systems, the 1988 Education Reform Act brought significant reform to British education, including a more prescriptive national curriculum framework in core subjects, new methods of assessment, and a strong choice program to permit parents to choose primary and secondary schools for their children.

France: France passed a law in 1989 to reaffirm the importance of basic reading, math, and writing skills in primary school. France has also set a national goal that by the year 2000, 80 percent of students will reach their senior year of secondary school (12th grade). The French national ministry is increasing consultative procedures with individual school councils and involving teachers in the determination of teaching methods. Parental involvement in education is an important goal.

Japan: The Prime Minister's three-year National Council on Educational Reform was established in 1984 amid concerns about "school desolation" (bullying, school violence, and excessive competition and pressure). The Council held public hearings

and published four reports, setting three goals for education reform: (1) develop a lifelong learning system in Japan, (2) place more emphasis on the importance of the individual, and (3) help Japanese schools cope with contemporary changes such as internationalization and computerization.

After the Council's report, Monbusho (the Ministry of Education) established a special ministry for the implementation of education reform. Some changes included a bill to permit alternative teacher certification so that people working in other sectors could be employed as teachers and the replacement of social studies with the study of history, geography, and civics in secondary school teacher training.

Netherlands: Key reforms issues for the Netherlands in recent years include:

- Increasing the number of youths with secondary school and higher education credentials, and achieving greater educational gains for minority youths. Proposals have been made for a national core curriculum through the first stage of secondary education, in order to increase general education achievement.
- Increasing local autonomy for local education systems. The national government currently funds most schools, public and private, and issues extensive regulations regarding staff, instruction, and facilities.

United States: The present national direction in U.S. education reform can be said to have begun in 1990 when President Bush and the nation's governors, for the first time, established six ambitious National Education Goals for the year 2000:

1. All children in America will start school ready to learn.

2. The high school graduation rate will increase to at least 90 percent.

3. American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter, including English, mathematics, science, history, and geography; and every school in America will ensure that all students learn to use their minds well, so that they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.

4. U.S. students will be first in the world in science and mathematics achievement.

5. Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and to exercise the rights and responsibilities of citizenship.

6. Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

To achieve these goals, in April 1991 President Bush launched America 2000, a national strategy to revolutionize American education community by community and school by school. The America 2000 strategy embodies four transforming ideas for American education, to put an end to "business as usual" and bring about revolutionary change in the nation's schools:

- Creation of "break-the-mold" New American Schools—starting over from scratch to build the best schools in the world.
- World Class Standards and a system of voluntary national exams, to establish clear benchmarks for what students should know and be able to do, and to measure their progress toward them.
- More flexibility for teachers and principals to make decisions at the individual school site.
- Parental choice of schools, to give middle- and low-income families more of the same options wealthy families now have and to unleash the beneficial forces of the marketplace.

At the heart of America 2000 is President Bush's challenge to every city, town, and neighborhood in the nation to become an America 2000 community. America 2000 communities are those that (1) adopt the National Education Goals as their own; (2) develop a community-wide strategy to achieve them; (3) design a report card to measure results; and (4) plan for and support a "break-the-mold" New American School. As of September 1992, almost 1,700 communities and 45 states, territories, and the District of Columbia had joined this crusade to transform America's schools.

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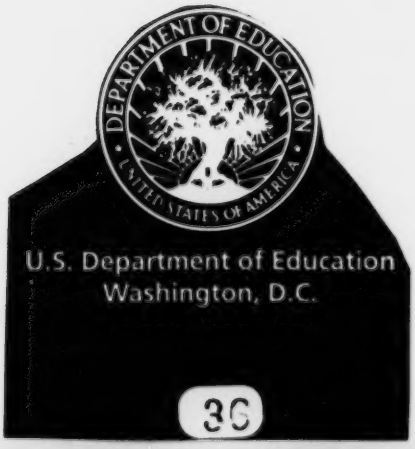

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